

### **Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (original) A method of forming coatings of at least two different coating molecules on at least two electrodes, the method comprising:

- (a) providing an array of at least two individually-addressable electrodes,
- (b) allowing a layer of a masking molecule to adsorb onto all electrodes,
- (c) inducing electrochemical desorption of the masking molecule from at least one but not all electrodes to expose a first set of exposed electrodes,
- (d) allowing a first coating molecule to adsorb onto the first set of exposed electrodes,
- (e) exposing all electrodes to a masking molecule to allow adsorption of the masking molecule onto all electrodes,
- (f) inducing electrochemical desorption of masking molecule from a second set of electrodes to expose a second set of exposed electrodes,
- (g) allowing a second coating molecule to adsorb onto the second set of exposed electrodes.

2. (currently amended) A The method according to claim 1 in which the array comprises at least 10, ~~preferably at least 50~~ individually-addressable electrodes.

3. (currently amended) A The method according to claim 1 ~~or claim 2~~ comprising repeating steps (c) to ( e) at least 8 times so as to form coatings of at least 10 different coating molecules on at least 10 different sets of electrodes.

4. (currently amended) A The method according to ~~any preceding claim 1~~ in which the diameter of each electrode is not more than 50  $\mu\text{m}$ , ~~preferably not more than 900 nm, more preferably not more than 500 nm.~~

5. (currently amended) A The method according to ~~any preceding claim 1~~ in which the separation between electrodes is not more than 30  $\mu\text{m}$ , ~~preferably not more than 900 nm, preferably not more than 100 nm, more preferably not more than 50 nm.~~

6. (currently amended) A The method according to ~~any preceding claim 1~~ in which the electrodes are metal electrodes and the masking molecules and the coating molecules are thiolated.

7. (currently amended) A The method according to ~~any preceding claim 1~~ in which the coating molecules are macromolecules having molecular weight of at least 500, ~~preferably at least 1000.~~

8. (currently amended) A The method according to ~~any preceding claim 1~~ in which the coating molecules are oligonucleotides modified with a functional group capable of adsorbing onto the electrodes.

9. (currently amended) A The method according to claim 8 additionally comprising providing nanoparticles functionalised with oligonucleotides complementary to the oligonucleotide coating molecules and allowing the strands to hybridise.

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10. (currently amended) A The method according to ~~any of claim 1 to 6~~ in which the coating molecules are polypeptides modified with a functional group capable of adsorbing onto the electrodes.

11. (currently amended) A The method according to ~~any preceding~~ claim 1 in which step (b), ~~and/or~~ step (d) or both also comprise application of an AC or DC electric field in order to induce orientation of the molecules being adsorbed.

12. (currently amended) A The method according to ~~any preceding~~ claim 1 comprising controlling the potential of electrodes from which desorption is not required in steps (c), ~~and/or~~ step (f) or both so as to prevent desorption from those electrodes.

13. (currently amended) A The method according to ~~any preceding~~ claim 1 comprising application of an AC or DC potential to the electrodes onto which adsorption is required in step (b), ~~and/or~~ step (e), ~~and/or~~ step (g) or any combination of these.

14. (currently amended) An array of at least 3, ~~preferably at least 5, more preferably at least 10~~ sets of individually-addressable electrodes, each set having adsorbed thereon a different coating molecule, the minimum distance between electrodes being not more than 900 nanometres, ~~preferably not more than 100 nanometres, more preferably not more than 50 nanometers~~.